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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,986	02/03/2004	Russell Hudyma	01641/100K021-US5	3566
7278	7590	09/29/2006	EXAMINER	
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257			PRITCHETT, JOSHUA L	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p>10/771,986</p>	<p><b>Applicant(s)</b></p> <p>HUDYMA, RUSSELL</p>	
	<p><b>Examiner</b></p> <p>Joshua L. Pritchett</p>	<p><b>Art Unit</b></p> <p>2872</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 16-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12, 14 and 16-30 is/are allowed.
- 6) ☒ Claim(s) 13, 31 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/04, 9/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

This action is in response to Amendment filed August 24, 2006. Claims 31 and 32 have been added as requested by the applicant.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braat (US 6,255,661) in view of Foo (US 5,515,207).

Braat teaches a photolithographic reduction projection objective comprising a first optical group including an even number of at least six mirrors (Fig. 1) wherein the third mirror (6) and fourth mirror (7) are disposed optically after a first mirror (1) and a second mirror (5) but are physically disposed between the first and second mirror (Fig. 1). Braat further teaches all the mirrors are arranged in a coaxial manner (col. 4 line 40). Braat lacks reference to a second dioptric optical group more imageward than the first group. Foo teaches a dioptric second optical group more imageward than the catoptric first group (Fig. 1) for reducing the image

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(abstract). Foo further teaches at least one lens is arranged in the optical path between the first mirror and the last mirror (Fig. 1). The claim does not require the lens be located in the first optical group therefore since the second optical group of Foo contains a mirror, a lens is located between the first and last mirror of the optical system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Braat invention include the second optical group of Foo for the purpose of correcting aberrations introduced into the image by the mirrors of the first optical system in Braat, to provide a more coherent image to the wafer.

***Allowable Subject Matter***

Claims 1, 2, 4-12, 14 and 16-30 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1 and 7, the prior art fails to teach or suggest a catadioptric system comprising a first optical group including an even number of at least six mirrors and a second substantially dioptric optical group more imageward than the first optical group, wherein the first optical group provides compensative axial color correction for the second optical group and a virtual image is formed by the first group physically on the object side of the sixth mirror and optically further along the optical beam path after the sixth mirror.

Regarding claim 11, the prior art fails to teach or suggest a catadioptric system comprising a first optical group including an even number of at least six mirrors and a second

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substantially dioptric optical group more imageward than the first optical group, wherein the first optical group provides compensative axial color correction for the second optical group and an intermediate image is formed between the fourth and fifth mirrors and a virtual image is formed by the first group optically further along the optical beam path after the sixth mirror.

The remaining claims depend from claims 1, 7 and 11 and are allowable for the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

Applicant's arguments filed August 24, 2006 have been fully considered but they are not persuasive.

Applicant argues the reflective mask of Braat cannot be interpreted as a mirror. The examiner views the interpretation of the reflective mask as a mirror as a reasonable interpretation because the mask reflects light. There are no structural limitations in the claim language that would differentiate between a mirror and a reflective mask. Therefore the examiner views the rejection as proper.

Applicant argues a person of ordinary skill in the art would equate the reflective mask to the objective recited in the claim. The limitation regarding the objective occurs in the preamble.

A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Applicant argues the claim requires an even number of mirrors and if the reflective mask is included as a mirror the Braat reference would have seven mirrors. The claim requires the first optical group include an even number of mirrors. There is no claim language to state what the definition of an optical group contains. Therefore the first six mirrors of the Braat reference (including the reflective mask as a mirror) would be the first optical group and satisfy the claim limitations.

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Applicant argues the lens arrangement disclosed by Foo does not correct for aberrations in the EUV spectrum. The claim language does not require aberration correction therefore this argument is moot.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua L Pritchett   
Examiner  
Art Unit 2872



**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**